Nonsuch Park Solar System Exploration Walk

A presentation by the Ewell Astronomical Society to the Nonsuch Park Joint Management Committee 20th January 2025

Summary

The Ewell Astronomical Society (EAS) would like to propose a walking route within Nonsuch Park that would provide an accessible and fun way for families and walkers to 'explore the solar system'. Information would be set out at scale distances of their true positions in the solar system, and provide engaging and entertaining information about our solar system neighbourhood aimed at all age groups.

This would encourage visitors to the park to explore the route along which these information points would be placed.

Nonsuch Park Solar System Exploration Walk

Contents

1. Proposal for a Nonsuch Park Solar System Exploration Walk

- An accessible and fun scale-distance model solar system walk within Nonsuch Park.

- The park presents an ideal location, being a popular local recreational facility, and this could help attract more visitors to the park.

- This information would be set out at distances relative to their true scale in the solar system.

Similar installations can be seen along the Avenue Verte at Neufchâtel-en-Bray in Normandy and at the Ruislip Lido in Hillingdon, London.

Ruislip Lido, Hillingdon, London

Avenue Verte, Normandy

2. Potential Routes for the Solar System Walk

- Nonsuch Park is well suited for this type of installation, with at least two suitable routes.
- The actual route chosen would ultimately be decided by the Joint Management Committee.

Example routes

1. Nonsuch car park to Nonsuch Mansion (0.75 km)

2. The Avenue, commencing at the Avenue car park (1 km)

3. Information Points - Practical Considerations

1. There are a couple of options of how this information could be presented
   i. The information could be presented in large (A2) information boards (e.g. as with Ruislip Lido)

   ii. A single large information board at the start of the walk, with small trail discs with a QR code at each checkpoint along the walk. This QR code would link to more detailed information on a web page

   iii. Other options not considered in further detail here include using smaller information boards (e.g. A4 size), or solely relying on trail discs alone with no introductory information board.

2. The information content would be developed and maintained by EAS, and the physical installation overseen by the JMC. Website material could be hosted by either EAS or Nonsuch Park

3. The option selection may also be dependent upon funding. As a small not-for-profit organisation, Ewell Astronomical Society would not have the funds itself to meet the full cost of these options

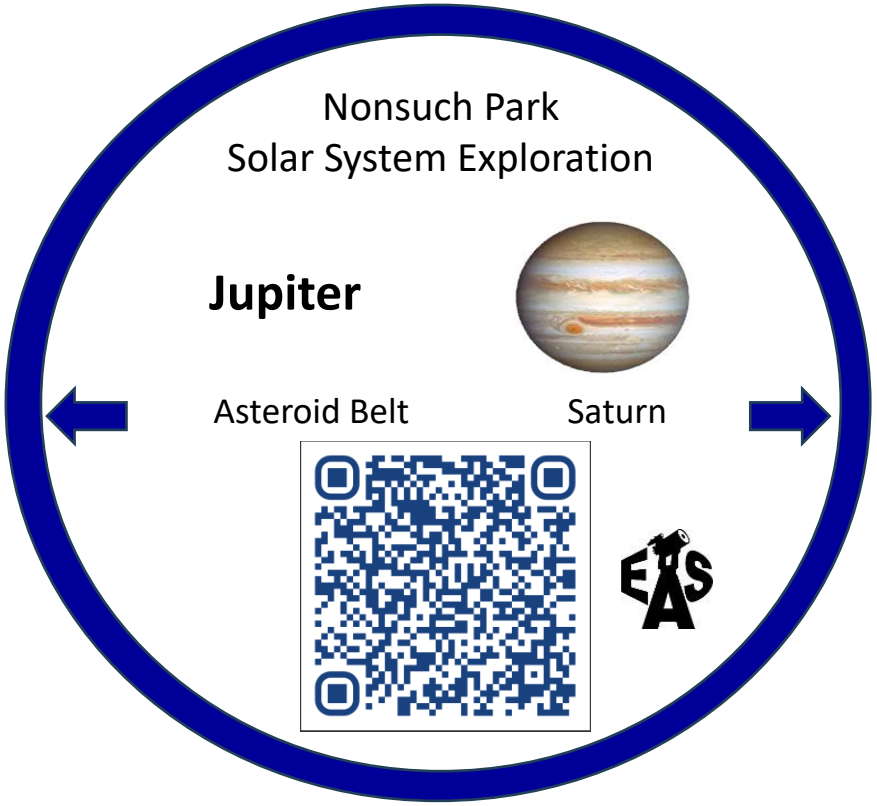
4. The first two options above are explored in more detail on the next page.

4. Implementation Options

1. Information Boards		
Benefits	**Challenges**	**Other Considerations**
• High visual impact to attract visitors' attention along the entire walk	• Relatively higher cost • Yet more 'furniture' in the park • Higher maintenance (keeping boards clean, replacing defaced or worn boards)	• Information boards could contain space for commercial sponsors to help offset the cost • Indicative costs: £1,000 per A2 board + installation (e.g posts & labour)

2. Single Information Board with Trail Discs and QR Codes		
Benefits	**Challenges**	**Other Considerations**
• Web-based Information is easy to maintain and update • Allows more information to be provided than otherwise possible on physical boards • Lower cost, less ongoing maintenance	• Information would require access by a smart phone which may prevent some visitors getting the full experience from the walk	• Discs could be placed on dedicated posts or using existing posts if suitable • Indicative costs: £15 per disc plus one display board (£1,000) + installation (eg, posts & labour)

5. Example Trail Disc



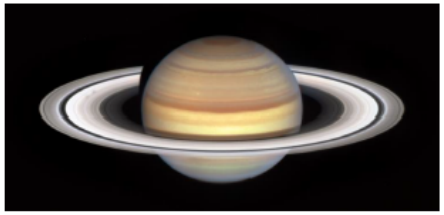
6. Example Webpage

Ewell Astronomical Society – Nonsuch Park Planets Walk

8. Saturn

Jupiter

143 metres



Uranus

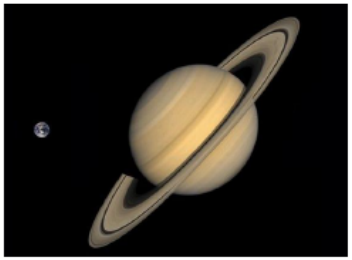
323 metres

The ringed planet Saturn [Image: NASA]

Basic facts

Mean diameter - 116,000 kms (18 Earth diameters)
Mass – 95 Earth masses
Distance from the Sun – 1.4 billion km (10 times the Earth's distance)
Year – 29 years
Day – 11 hours
Number of moons - 146

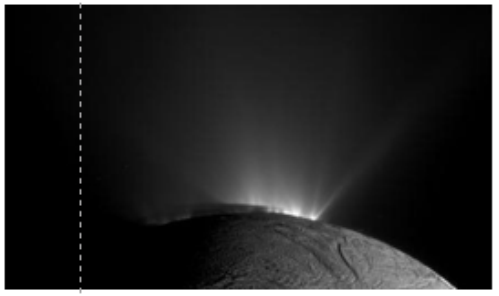
Saturn is the sixth planet from the Sun, and many would argue, the most beautiful. Saturn's rings were first observed over 400 years ago soon after the invention of the telescope. Although the other giant planets also have ring systems, they are not easily seen and were all discovered within the last 50 years.



The Earth's relative size compared to Saturn [Image: NASA]

Saturn is primarily made of hydrogen and helium gas, and as such, does not have a surface. What we see through our telescopes are the clouds in Saturn's atmosphere just in the same way as we have clouds here on Earth. However, Saturn's clouds are whipped along by winds of up to 1,800 kilometres per hour! By comparsion winds in the most severe cyclones on Earth have been measured up to only 400 – 500 kilometres per hour.

One of Saturn's most interesting moons is Enceladus. Enceladus is very small, at just 500 kilometres in diameter. The visiting NASA Cassini spacecraft imaged what appears to be plumes of water escaping from fissures on its icy surface leading to the theory that Enceladus harbours an ocean of liquid water below its frozen surface and so is one of the prime candidates for the search for life in the solar system.



Plumes of water escaping from Saturn's moon Enceladus [Image: NASA]

Did you know?

Saturn is largely made of hydrogen and helium – the two lightest elements in the universe. As a result Saturn has about the same density as wood and so, if you had a bathtub big enough, it would actually float!

7. Discussion Points

- The **option favoured will be dependent upon the availability of funds and the trade-off with:**

Higher visual impact, with higher implementation & ongoing maintenance costs	*versus*	***Lower visual impact, with lower implementation & ongoing maintenance costs***

- Funding for either option may be available through, for example, the Surrey County Council "Your Fund Surrey"

- Physical implementation to be overseen and/or managed by the JMC;
  Website development to be managed by EAS;
  Website hosting by either EAS or Nonsuch Park

- Proposed next steps:
  - Selection of the desired option
  - More detailed costings and pursuing funding options

Appendix 1 - Additional Information

Example Scaled Distances:

Information Point	Distance (m)
1. Overview [1]	0
2. The Sun	2
3. Mercury	15
4. Venus	26
5. Earth / Moon	35
6. Mars	52
7. Asteroid Belt	91
8. Jupiter	174
9. Saturn	317
10. Uranus	640
11. Neptune	998
12. Beyond Neptune [2]	1,000

(1) Overview – would provide an explanation of the walk, including a map showing the locations of each information point. Ideally this information point at the very least would be in the form of a physical information board.

(2) The final information point would provide information about our wider galaxy and universe

Ewell Astronomical Society (EAS):

- The EAS was established in 1966, with the late Sir Patrick Moore as its founding Patron.
- The Society meets monthly at the Nonsuch High School for Girls, and supports local outreach activities with various groups such as the Boy Scouts and Girl Guides, as well as being a regular participant at the annual Nonsuch Town and Country Show. It will also shortly be resuming support activities in the operation of the Nonsuch High School for Girls own observatory for the benefit of staff and pupils.
- If the Solar System walk was implemented, then the Society would also be able to add this to its resources to support such outreach activities by offering guided “solar system walks”, further promoting the use of the park.
- Contact details:
  - ewellastro@gmail.com
  - www.ewellastronomy.org